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bcc

Subject EE/CA Outline, Omega Site

History: This message has been forwarded.

Chris:

Attached for your reference is a copy of the preliminary draft EE/CA for your reference. Please note that we view this outline as an informal submittal, to solicit initial comments from you and CH2MHILL

Have a nice weekend



Chuck EECA Annotated Outline ver3 doc

**Preliminary Draft – For Discussion Purposes Only**

# **Engineering Evaluation and Cost Analysis (EE/CA) Omega Chemical Site**

**Annotated Outline  
March 11, 2003**

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## **Executive Summary**

### **1.0 Introduction**

- 1.1 Scope and Objectives (Identifies the specific scope and objectives of the report)
- 1.2 Site Background (Gives a brief history of the site)
- 1.3 Report Organization (Provides a section-by-section description of report organization)

### **2.0 Site Characterization Summary**

- 2.1 Site Location and Surrounding Land Uses (Text and map that describe the site location and surrounding buildings/land uses)
- 2.2 Hydrogeology (Gives a summary of subsurface conditions; will include the Site Conceptual Model being developed for the Soils RI/FS work plan addendum)
- 2.3 Extent of Contamination (Gives a summary of contaminant distribution with maps showing pertinent data)
  - 2.3.1 Groundwater
  - 2.3.2 Soils and Soil vapor (To the extent applicable to the EE/CA groundwater action)

### **3.0 Identification of Removal Action Scope and Objectives**

- 3.1 Removal Action Scope and Objectives (As per the EE/CA guidance, mention will be made here as to the anticipated schedule of the removal action)
- 3.2 ARARs (Gives a list of ARARs as drivers to define removal action objectives)
- 3.3 Summary of Risk Assessment (This EE/CA document will precede the Risk Assessment to be prepared for the On-Site Soils RI/FS. Therefore, this section will include Risk Assessment issues that are relevant to defining removal action objectives; notably, identification and evaluation of reasonably plausible exposure scenarios related to groundwater contamination)

### **4.0 Identification and Evaluation of Removal Action Alternatives**

- 4.1 Identification of Removal Alternatives (Provides text and figures to describe the conceptual design of each alternative)
  - 4.1.1 Alternative 1: Source Area Contaminant Mass Removal From Groundwater (Vertical groundwater extraction wells in locations of greatest contaminant concentration are used to remove contaminant mass from the source area. A treatment system treats extracted groundwater which is then discharged to surface water/storm drain.)
  - 4.1.2 Alternative 2: Source Area Hydraulic Containment For Groundwater (Vertical pumping wells along Putnam Street are used to contain the groundwater contaminant plume. After treatment, extracted groundwater is discharged to surface water/storm drain.)
  - 4.1.3 Alternative 3: Source Area Hydraulic Containment For Groundwater, with Re-injection for Enhanced Anaerobic Biodegradation (Same as Alternative 2, but treated groundwater is mixed with amendments to stimulate enhanced anaerobic biodegradation (EAB) and re-injected up and/or down gradient of the source area within the plume to further reduce groundwater contaminant concentrations. Note that the EE/CA document will also evaluate In-Situ Chemical Oxidation (ISCO) in addition to EAB, but is likely to "screen out" this technology)
- 4.2 Evaluation Criteria (Gives descriptions of criteria from EE/CA guidance)
  - 4.2.1 Effectiveness
  - 4.2.2 Implementability
  - 4.2.3 Cost

4.3 Evaluation of Alternatives (Uses definition of the three evaluation criteria given in the EE/CA guidance to evaluate each alternative independently)

4.3.1 Alternative 1: Source Area Contaminant Removal From Groundwater

4.3.2 Alternative 2: Source Area Hydraulic Containment For Groundwater

4.3.3 Alternative 3: Source Area Hydraulic Containment For Groundwater, with Re-injection for Enhanced Anaerobic Biodegradation

**5.0 Comparative Analysis of Removal Action Alternatives** (Compares the relative performance of the alternatives regarding the three criteria and forms the basis for recommending one of the alternatives; "Implementability will include an evaluation of permitting issues)

5.1 Effectiveness

5.2 Implementability

5.3 Cost

**6.0 Recommendation of Removal Action Alternative** (Gives rationale for selecting the recommended alternative and a cost estimate for its implementation)

6.1 Recommended Removal Action Alternative

6.2 Detailed Cost Estimate

6.3 Removal Action Planning Issues (This subsection is intended to include some of the information originally to be provided in a RAP, including but not limited to permitting issues; the remaining RAP information will be provided as a part of the subsequent 30% Design Report)

**7.0 References**

**8.0 Figures**

**9.0 Tables**

**Appendices**

**A: Details of Cost Estimates**